

# Travis Zhang

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## Education

### Cornell University, College of Engineering

*Bachelor of Science in Computer Science*

**Ithaca, New York**

*Sep 2020 – May 2024*

- **Relevant Courses:** Multivariable Calculus, Discrete Structures, OOP and Data Structures, Introduction to Machine Learning

### Hamilton High School

**Chandler, Arizona**

**Weighted GPA:** 4.927/5.0, **Unweighted GPA:** 4.0/4.0

*July 2016 – May 2020*

- **Relevant Courses:** Multivariable Calculus, Differential Equations, Linear Algebra, AP Java, AP Physics C: Mechanics and E & M
- **Honors:** Steve Sanghi Scholarship Award, Andy Grove Intel Scholarship, Impact Scholarship, National Honor Society Semifinalist Scholarship, Worth & Dot Howard Foundation Scholarship

## Experience

### ASU Robust Machine Learning Group

**Tempe, Arizona**

*Student Researcher*

*April 2019 – Present*

- Applied transformation-invariant constraints on adversarial training using Tensorflow to improve Convolutional Neural Network (CNN) performance
- Implemented 3 algorithms to reduce time for loss to converge for proposed methodology (up to 60% reduction)
- Designed and implemented optimization algorithms in Pytorch to fool a Deep RL agent in a realistic scenario

### University of Central Florida's Competitive Programming Camp

**Orlando, Florida**

*Student*

*June 2017 – July 2017*

- Learned about various competitive programming algorithms including Dijkstra's algorithm and Prim's algorithm
- Competed in 5+ programming competitions at the camp

### ASU Signal, Information, Networks, and Energy Laboratory

**Tempe, Arizona**

*Student Researcher*

*Sep 2017 – April 2018*

- Created program to temporally and spatially interpolate power outputs of solar panels using Python libraries
- Analyzed patterns in cloud coverage and temperature to account for fluctuations in power output

## Leadership Activities

### Cornell Data Science Project Team

**Ithaca, New York**

*Incoming Member for the Intelligent Systems Subteam*

*Nov 2020 – Present*

### Associate of Computer Science Undergraduates

**Ithaca, New York**

*Academic Officer*

*Oct 2020 – Present*

- Helped organize and host academic events including Research Night and internship/research panels

### Hamilton Robotics Team

**Chandler, Arizona**

*Head of Electrical, Head of Communications*

*Aug 2016 – May 2020*

- Designed robot using Solidworks and used CNC router and mill to build precise parts
- Programmed autonomous, teleoperated, and vision code for robot using Java and FRC WPI Library

### Mathworks Math Modeling Challenge

**Chandler, Arizona**

*Team Leader*

*Jan 2019 – Feb 2020*

- Developed and implemented mathematical models in Python to solve real-world problems
- Wrote a 15+ page research paper to report experimental designs and results

## Personal Projects

### HackOurCampus Hackathon

*Aug 2020 – Sep 2020*

- Designed iOS app that reminded students to bring both COVID-related and personal items
- Implemented Geofencing technologies to encourage social distancing and track when to send out reminders

### National Honor Society App

*July 2019 – Jan 2020*

- Developed both the iOS and Android mobile application for school's NHS club
- Incorporated Google Firebase to create a personalized experience for users

### CUSD Equity Symposium App

*Nov 2018 – May 2020*

- Produced iOS app for the Chandler school district's annual equity symposium
- Integrated Google Firebase to build a login system and to store symposium information in a database

### Skin Cancer Diagnosis using Neural Networks

*Aug 2018 – April 2019*

- Built CNNs and Generative Adversarial Networks in Keras + Tensorflow to improve computer diagnosis of skin cancer

## Skills and Interests

**Skills:** Java, Python, Swift, C++, Keras, Pytorch, Tensorflow, Numpy, Pandas, Git/Github, HTML, CSS, LaTeX, Scikit-learn, SwiftUI

**Miscellaneous Skills:** Photoshop, Autodesk Inventor, Solidworks CAD, Welding, CNC Machine, Soldering, Milling

**Interests:** Photography, Tennis, Snowboarding, Adversarial Attacks in Machine Learning, Robotics, Airplanes